

BEFORE THE  
PUBLIC SERVICE COMMISSION  
OF SOUTH CAROLINA

Application of Duke Energy Carolinas, LLC  
for Approval of Energy Efficiency Plan Including an  
Energy Efficiency Rider and Portfolio of Energy  
Efficiency Programs

## COVER SHEET

DOCKET  
NUMBER: 2007-358-E

(Please type or print)

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☐ Emergency Relief demanded in petition ☐ Request for item to be placed on Commission's Agenda expeditiously

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<input type="checkbox"/> Electric/Water	<input type="checkbox"/> Appellate Review	<input type="checkbox"/> Objection	<input type="checkbox"/> Resale Agreement	
<input type="checkbox"/> Electric/Water/Telecom.	<input type="checkbox"/> Application	<input type="checkbox"/> Petition	<input type="checkbox"/> Resale Amendment	
<input type="checkbox"/> Electric/Water/Sewer	<input type="checkbox"/> Brief	<input type="checkbox"/> Petition for Reconsideration	<input type="checkbox"/> Reservation Letter	
<input type="checkbox"/> Gas	<input type="checkbox"/> Certificate	<input type="checkbox"/> Petition for Rulemaking	<input type="checkbox"/> Response	
<input type="checkbox"/> Railroad	<input type="checkbox"/> Comments	<input type="checkbox"/> Petition for Rule to Show Cause	<input type="checkbox"/> Response to Discovery	
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<input type="checkbox"/> Water/Sewer	<input type="checkbox"/> Expedited Consideration	<input type="checkbox"/> Proposed Order	<input checked="" type="checkbox"/> Other: Rebuttal Testimony: Janice D. Hager	
<input type="checkbox"/> Administrative Matter	<input type="checkbox"/> Interconnection Agreement	<input type="checkbox"/> Protest		
<input type="checkbox"/> Other:	<input type="checkbox"/> Interconnection Amendment	<input type="checkbox"/> Publisher's Affidavit		
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BEFORE  
THE PUBLIC SERVICE COMMISSION OF  
SOUTH CAROLINA  
DOCKET NO. 2007-358-E

In re:	)	
Application of Duke Energy Carolinas, LLC	)	<b>REBUTTAL TESTIMONY OF</b>
For Approval of Energy Efficiency Plan	)	<b>JANICE D. HAGER FOR</b>
Including an Energy Efficiency Rider and	)	<b>DUKE ENERGY CAROLINAS</b>
Portfolio of Energy Efficiency Programs	)	
	)	

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1 Q. PLEASE STATE YOUR NAME, ADDRESS AND POSITION WITH DUKE  
2 ENERGY CORPORATION.

3 A. My name is Janice D. Hager. My business address is 526 South Church Street,  
4 Charlotte, North Carolina. I am Managing Director, Integrated Resource  
5 Planning and Environmental Strategy for Duke Energy Corporation's ("Duke  
6 Energy") operating utilities, including Duke Energy Carolinas, LLC ("Duke  
7 Energy Carolinas" or the "Company").

8 Q. HAVE YOU PREVIOUSLY FILED DIRECT TESTIMONY IN SUPPORT  
9 OF DUKE ENERGY CAROLINAS' APPLICATION IN THIS DOCKET?

10 A. Yes, I have.

11 Q. WHAT IS THE PURPOSE OF YOUR REBUTTAL TESTIMONY?

12 A. The purpose of my rebuttal testimony is to (1) refute Piedmont Natural Gas  
13 Company, Incorporated's ("Piedmont") arguments presented by Piedmont  
14 Witnesses Skains and Yoho that the Company's Energy Efficiency Plan  
15 encourages fuel inefficiency and consumer fuel switching; and (2) correct  
16 misstatements contained in the testimony of Southern Environmental Law Center  
17 ("SELC"), Southern Alliance for Clean Energy ("SACE"), Coastal Conservation  
18 League ("CCL"), and Environmental Defense ("ED") (collectively, "SELC")  
19 Witnesses Nichols and Atkins concerning Duke Energy Carolinas' past demand  
20 side management ("DSM") achievements and Commission approved incentives.

21 Q. IN YOUR OPINION, IS PIEDMONT'S ASSERTION THAT DUKE  
22 ENERGY CAROLINAS' ENERGY EFFICIENCY PLAN LEADS TO LESS  
23 ENERGY EFFICIENCY CORRECT?

1 A. No, I cannot conclude that their assertion is correct, nor do I believe it is relevant.  
2 Piedmont Witnesses Skains and Yoho reach their conclusions relative to total  
3 energy efficiency based on erroneous assumptions about Duke Energy Carolinas'  
4 existing and future proposed electric generation resource mix. The main error in  
5 Piedmont's analyses and resulting conclusions is the assumption that the  
6 alternative to serving end uses directly with natural gas is by electricity generated  
7 with natural gas. Relying on this assumption, Witness Skains asserts that,  
8 "[N]atural gas delivered to energy consumers for direct use is more efficient,  
9 requires less overall consumption of energy and related energy infrastructure, and  
10 lowers GHG emissions compared to using natural gas for power generation to  
11 serve the same energy demand in the form of electricity." Skains Direct  
12 Testimony, at 6, lines 5-9.

13 The comparison is simply incorrect for the Duke Energy Carolinas system.  
14 Although natural gas generation is an important part of Duke Energy Carolinas'  
15 existing and planned resource mix, it produces only a very small percentage of the  
16 energy used to serve customer needs. In fact, in Duke Energy Carolinas' most  
17 recent South Carolina fuel proceeding, Duke Energy Carolinas' energy mix for  
18 the historical test period (July 1, 2006 through June 30, 2007) was about half  
19 nuclear and half coal with only three-tenths of 1% from natural gas-fired  
20 generation. Even with the planned addition of almost 4800 MWs of natural gas  
21 over the next 20 years, the Company's energy generation from natural gas-fired  
22 generation is expected to be only about 5% by 2027.

1   **Q.   WHY IS PIEDMONT WITNESS YOHO’S COMPARISON OF GAS-**  
2       **FIRED TURBINES WITH DIRECT USE OF NATURAL GAS NOT**  
3       **VALID?**

4   A.   The testimony of Piedmont Witness Yoho includes results of “studies” conducted  
5       by Piedmont to demonstrate that using electricity to serve space and water heating  
6       may require more BTUs than serving those end uses with natural gas. Yoho  
7       Direct Testimony, at 7-9. Specifically, Mr. Yoho states, “Based on our analysis,  
8       the relative fuel cycle efficiencies associated with simple cycle gas-fired turbine  
9       generation equipment – which is the only type of gas-fired turbine generation  
10      equipment currently in use by Duke – do not compare favorably with the direct  
11      use of natural gas.” Yoho Direct Testimony, at 7, lines 16-20. As I stated  
12      previously, comparing natural gas end uses to electricity from natural-gas fired  
13      generation is simply not a valid comparison for the Duke Energy Carolinas’  
14      system because natural gas-fired generation is and will continue to be such a  
15      small percentage of the Company’s energy mix.

16             Further, in the example offered by Mr. Yoho on pages 8 and 9 of his  
17      testimony, he focuses on the additional generation required for use of electricity  
18      for space and water heating. Mr. Yoho implies that electricity from the  
19      Company’s combustion turbines (CTs) is used to heat water and space. Yet, as  
20      Mr. Yoho acknowledges in his testimony, Duke Energy Carolinas operates its  
21      CTs to meet peak demand. The Company’s peak occurs during the summer  
22      months, when its CTs are run to meet air conditioning load requirements, not  
23      space heating. Consequently, space heating does not increase the demand for

1 electricity because it does not impact the summer peak demand, which is what  
2 drives the need for incremental generation. And, while water heating can have an  
3 impact on peak demand, none of the Company's proposed programs offer  
4 incentives for residential water heating. Thus, Mr. Yoho's example is irrelevant.

5 **Q. IS DUKE ENERGY CAROLINAS' ENERGY EFFICIENCY PLAN**  
6 **INTENDED TO INCREASE DEMAND BY RETAIL CUSTOMERS FOR**  
7 **ELECTRICITY?**

8 A. No, quite the opposite. The Company's Energy Efficiency Plan is designed to  
9 offer customers energy efficiency programs which will reduce both the  
10 Company's need for capacity and energy. As shown on page 3 of the Company's  
11 Application, the plan is expected to result in the reduction of 1865 MWs of  
12 capacity and 743,000 MWHs by the fourth year as compared to the capacity and  
13 energy that would be needed without the programs. As discussed by witness  
14 Schultz, the proposed programs could result in some unintended switching of  
15 some gas end uses to electric end uses, but the overall impact is expected to be a  
16 decrease in the need for electric capacity and energy.

17 **Q. DO YOU HAVE ANY OTHER CRITICISMS OF THE PIEDMONT**  
18 **WITNESSES' TOTAL FUEL EFFICIENCY ARGUMENTS?**

19 A. Yes. Notwithstanding the Company's least cost generation planning obligations,  
20 neither Mr. Skains nor Mr. Yoho provide any consideration to the customer's cost  
21 other than the erroneous example discussed above which focused only on  
22 incremental infrastructure costs, not total customer costs. Mr. Yoho offers four  
23 principles he believes should be used to evaluate utility sponsored incentive

1 programs. Looking at just the first principle, Mr. Yoho contends that it requires  
2 analysis of utility programs on a comprehensive and multi-fuel basis looking at  
3 reasonably available competing energy products and services and the likely  
4 impacts of the proposed programs, including impacts on load growth,  
5 competition, cost structures, avoided capital investments, overall supply and  
6 demand, and customer comfort and convenience. Yoho Direct Testimony, at 4-5,  
7 lines 20-2. Conspicuously absent from this list is the cost to customers. Perhaps  
8 this is because gas is more expensive than electricity in the southeast on a per  
9 British Thermal Unit (BTU) basis and its price is more volatile. In my opinion,  
10 customers are likely to be more concerned with the size and volatility of their  
11 energy bill than that the total efficiency of one source may be better than another.

12 **Q. WHAT IS YOUR OPINION OF WITNESS SKAINS' PROPOSAL THAT**  
13 **THE COMMISSION DIRECT DUKE ENERGY CAROLINAS,**  
14 **PIEDMONT AND THE ORS TO ENGAGE IN A COLLABORATIVE**  
15 **PROCESS TO DETERMINE THE APPROPRIATE PORTFOLIO OF**  
16 **ENERGY EFFICIENCY PROGRAMS FOR THE COMPANY?**

17 **A.** Duke Energy Carolinas does not believe it is appropriate to engage in discussions  
18 with a competitor to "reach an agreement" on modifications to programs that are  
19 of concern to that competitor. Skains Direct Testimony, at 11, line 17. Any  
20 solution other than one that involves both companies offering more energy  
21 efficiency options would not be beneficial to customers. With that said, the  
22 Company will respond to any concerns regarding its energy efficiency programs

1 that the Office of Regulatory Staff may have relating to issues that have been  
2 raised by Piedmont in this proceeding.

3 **Q. DO YOU HAVE AN ALTERNATIVE PROPOSAL TO THAT OFFERED**  
4 **BY PIEDMONT?**

5 A. Yes. The Company respectfully suggests that rather than seeking to limit Duke  
6 Energy Carolinas' ability to offer energy efficiency options to its customers,  
7 Piedmont should develop and offer its own energy efficiency options. I looked at  
8 Piedmont's website, and as best I can tell, Piedmont does not offer its South  
9 Carolina customers any energy efficiency programs. Piedmont can seek  
10 Commission approval to offer comparable energy efficiency and demand side  
11 management ("DSM") programs and could even propose to use the save-a-watt  
12 approach. I am aware that Piedmont has several programs ongoing in North  
13 Carolina, evidently begun in response to the North Carolina Utilities  
14 Commission's Order Approving Partial Rate Increase and Requiring Conservation  
15 Initiative, in which the NCUC adopted Piedmont's proposed unbundling  
16 mechanism but ordered the company to initiate conservation measures. The  
17 unbundling mechanism provides protection against the lost revenues associated  
18 with conservation programs.

19 In South Carolina, Piedmont has exercised its option under the South  
20 Carolina Natural Gas Rate Stabilization Act to have its rates adjusted outside of  
21 general rate cases based on, at least in part, its actual return on equity compared to  
22 its allowed return on equity. This mechanism would seem to provide Piedmont  
23 with a similar measure of protection against lost revenues if it were to



1 aggressively pursue energy efficiency for its South Carolina customers.  
2 Regardless of whether Piedmont chooses the rate stabilization means or some  
3 other means, it seems more appropriate to me for Piedmont to find a way to offer  
4 energy efficiency options to South Carolina consumers rather than to seek to limit  
5 Duke Energy Carolinas' right to do so. Duke Energy Carolinas submits that  
6 customers should be offered a wide array of energy efficiency options and the  
7 freedom to choose among those options.

8 **Q. SWITCHING NOW TO THE TESTIMONY OF SELC'S WITNESS**  
9 **NICHOLS, CAN YOU SPEAK TO MR. NICHOLS' STATEMENT**  
10 **REGARDING THE LACK OF SHAREHOLDER REWARDS FOR LOAD**  
11 **MANAGEMENT PROGRAMS?**

12 A. On page 8 of SELC Witness Nichols' testimony, he states that he "is not aware of  
13 any regulatory commission that permits a utility to earn *any* additional  
14 shareholder reward for load management, above and beyond recovery of program  
15 costs." [Emphasis in original.] Apparently, Mr. Nichols is unaware that this  
16 Commission has allowed Duke Energy Carolinas to accrue shareholder incentives  
17 for load management. Pursuant to the Commission's Order No. 91-1022, Duke  
18 Energy Carolinas booked rewards for DSM and energy efficiency programs,  
19 including load management programs in 1992, 1993, and 1994. *Order Approving*  
20 *Rate Increase, PSC Docket No. 91-216-E*, Order No. 91-1022, at 25. These  
21 rewards were included in the Company's DSM Deferral Account for future  
22 recovery. The North Carolina Utilities Commission authorized an identical  
23 measure in North Carolina for Duke Energy Carolinas. The issue is not whether

1 shareholder incentives are appropriate. The Commission has already determined  
2 the answer to that question. Duke Energy Carolinas' position is that a new, more  
3 innovative approach to shareholder rewards is needed.

4 **Q. IS SELC WITNESS ATKINS' CORRECT THAT DUKE ENERGY**  
5 **CAROLINAS HAS NEVER TAKEN ADVANTAGE OF THE COST**  
6 **RECOVERY MECHANISM GRANTED BY THIS COMMISSION?**

7 A. No. As noted above, Duke Energy Carolinas took advantage of the cost recovery  
8 mechanism made available to it in the early 1990s. The awards were placed in the  
9 DSM Deferral Account for future recovery.

10 **Q. PLEASE ADDRESS SELC WITNESS ATKINS' TESTIMONY**  
11 **REGARDING PAST DSM EFFORTS.**

12 A. As Witness Atkins notes, Duke Energy Carolinas was active in the energy  
13 efficiency arena in the late 1980s and early 1990s. It was during this time that the  
14 Commission allowed Duke Energy Carolinas to earn rewards for its DSM efforts.  
15 However, the subsequent regulatory uncertainty surrounding electric deregulation  
16 coupled with the lack of need for base load power plants during the mid-1990s  
17 resulted in significantly reduced focus on energy efficiency throughout the  
18 southeast. During this period, Duke Energy Carolinas' rates were very low and  
19 stable as a result, in part, of (i) rising nuclear capacity factors, which enabled the  
20 Company to avoid building base load generation, and (ii) a stable cost  
21 environment. Therefore, customer interest in energy efficiency was low.

22 With the recent need for base load generation and the concept of retail  
23 competition not likely to be embraced in the southeast, Duke Energy Carolinas

1       has revitalized its energy efficiency efforts. Witness Atkins appears to assume  
2       that the same incentives that were used 15 years ago are all that is needed now  
3       and no other mechanism is appropriate. I disagree with these conclusions. As the  
4       Company noted in its Application, the proposed plan is a new and innovative  
5       approach that focuses on results, not spending.

6   **Q.    DOES THIS CONCLUDE YOUR PRE-FILED REBUTTAL TESTIMONY?**

7   **A.    Yes.**